

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A dimerisation catalyst system including the combination of
  - [[ - ]] a source of tungsten;
  - [[ - ]] a ligand precursor containing at least N or O as a bonding atom to bond to the tungsten in the source of tungsten, the source of tungsten and the ligand precursor being selected to form an acid due to the bonding of the ligand precursor to the tungsten; and  
a neutralized tertiary amine base and/or a tertiary amine base
  - [[and]] wherein the catalyst system ~~being characterized therein that~~ it is substantially free of [[the]] acid formed due to the bonding of the ligand precursor to the tungsten; and [[that]] the molar ratio of the tungsten in the source of tungsten to ligand precursor is at least  $1:3/n$ , where n is the number of bonds that the ligand precursor forms with the tungsten.
2. (Original) The catalyst system of claim 1 wherein the molar ratio of the tungsten in the source of tungsten to ligand precursor is at least  $1:4/n$ .
3. (Original) The catalyst system of claim 2 wherein the molar ratio of the tungsten in the source of tungsten to ligand precursor is not higher than  $1:5/n$ .
4. (Original) The catalyst system of claim 3 wherein the molar ratio of the tungsten in the source of tungsten to ligand precursor is at least  $1:4/n$ .

5. (Currently amended) The catalyst system of ~~any one of the preceding claims~~ claim 1 wherein the tungsten in the source of tungsten is in the 6+ oxidation state.

6. (Currently amended) The catalyst system of ~~any one of the preceding claims~~ claim 1 wherein the source of tungsten is selected from the group of compounds consisting of an organic salt of tungsten; an inorganic salt of tungsten; and an organometallic complex of tungsten.

7. (Original) The catalyst system of claim 6 wherein the source of tungsten is a tungsten halide.

8. (Currently amended) The catalyst system of ~~any one of the preceding claims~~ claim 1 wherein the ligand precursor includes only N and/or O as bonding atoms to bond to the tungsten.

9. (Original) The catalyst system of claim 8 wherein the ligand precursor includes only two such bonding atoms which atoms are in the form of N and/or O and which are the same or different.

10. (Original) The catalyst system of claim 8 wherein the ligand precursor includes a single such bonding atom which atom is in the form of N or O.

11. (Original) The catalyst system of claim 10 wherein the ligand precursor is a compound of the formula  $R^1_qNH_{3-q}$ , wherein q is from 1-2 and  $R^1$  is an organic moiety,  $R^1$  being the same or different when q=2.

12. (Original) The catalyst system of claim 11 wherein at least one  $R^1$  group is an aromatic compound.

13. (Original) The catalyst system of claim 12 wherein the ligand precursor is a compound selected from the group consisting of aniline and a substituted aniline.

14. (Currently amended) The catalyst system of ~~any one of the preceding claims~~ claim 1 which includes an activator.

15. (Original) The catalyst system of claim 14 wherein the activator is a compound containing a Group 3A atom.

16. (Currently amended) A method of preparing a dimerisation catalyst system comprising the steps of combining

[[ - ]] a source of tungsten; and

[[ - ]] a ligand precursor containing at least N or O as a bonding atom to bond to the tungsten in the source of tungsten, the source of tungsten and the ligand precursor being selected to form an acid due to the bonding of the ligand precursor to the tungsten;

wherein the molar ratio of the tungsten in the source of tungsten to ligand precursor is at least 1:3/n, wherein n is the number of bonds that the ligand precursor forms with the tungsten; and

the method including the step of removal or neutralisation of acid formed due to the bonding of the ligand precursor to the tungsten by the addition of a base in the form of a tertiary amine.

17. (Cancelled).

18. (Currently amended) The method of ~~either one of claims~~ claim 16 or ~~47~~ which includes the step of adding an activator for activating the catalyst system.

19. (Currently amended) A dimerisation catalyst system prepared by the method of ~~any one of claims~~ claim 16 to ~~18~~.

20. (Currently amended) A process for the dimerisation of a starting olefinic compound or codimerisation of different starting olefinic compounds, each

starting olefinic compound being in the form of an olefin or a compound that includes an olefinic moiety, the process comprising the steps of mixing at least one starting olefinic compound with a catalyst system of ~~any one of claim~~ claim 1 ~~to 15~~ to form a dimerised product of a starting olefinic compound or a codimerised product of different starting olefinic compounds.

21. (Original) The process of claim 20 wherein each starting olefinic compound is an  $\alpha$ -olefin.

22. (Original) The process of claim 21 wherein the  $\alpha$ -olefin has five or more carbon atoms and has only one double bond between carbon atoms.

23. (Original) The process of any one of claims 20 to 22 wherein the dimerised or codimerised product has only a single branch formed due to the dimerisation.

24. The process of claim 23 wherein the single ~~branched~~ branch formed due to dimerisation is a methyl branch.

25. (Currently amended) A dimerised product or codimerised product produced by the process of ~~any one of claims~~ claim 20 ~~to 24~~.

26. (Cancelled).

27. (New) The catalyst system of claim 1 wherein the neutralized tertiary amine base is neutralized triethylamine and the tertiary amine base is triethylamine.

28. (New) The method of claim 16 wherein the tertiary amine is triethylamine.

29. (New) The process of claim 20 wherein the reaction product produced contains more than 50 wt% of a mono-branched mono-methyl product.